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Response to "Best (but oft forgotten) practices: testing for treatment effects in randomized trials by separate analyses of changes from baseline in each group is a misleading approach".

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Response to “Best (but oft forgotten) practices: testing for treatment effects in randomized trials by separate analyses of changes from baseline in each group is a misleading approach”

Dear Editor:

We were surprised to see our study (1) used as the first example of how not to compare group means with each other in the recent article by Bland and Altman (2), because, in fact, our conclusions were not based on within-group comparisons. However, because of size limits of the abstract, we presented the within-group comparisons to provide as clear a picture as possible regarding the effects of glucose, fructose, and high-fructose corn syrup (HFCS) consumption on lipid/lipoprotein risk factors for cardiovascular disease. In retrospect we should have attempted to make the following statistically more appropriate (but 37 words longer) summary of our results fit into the abstract, as follows:

Results: The effects of consuming HFCS on the main outcomes were comparable to those of fructose and significantly higher than those of glucose. Changes (Δ) in 24-h triglyceride area under the curve ($P = 0.0058$, effect of sugar)—HFCS: $+1.8 \pm 1.4$ mmol/L \times 24 h; fructose: $+4.7 \pm 1.2$ mmol/L \times 24 h ($P = 0.74$ compared with HFCS, Tukey’s); glucose: -1.9 ± 0.9 mmol/L \times 24 h ($P = 0.034$ compared with HFCS). Fasting LDL ($P = 0.0098$, effect of sugar)—HFCS: $+0.42 \pm 0.11$ mmol/L; fructose: $+0.29 \pm 0.082$ mmol/L ($P = 0.67$ compared with HFCS); glucose: $+0.012 \pm 0.071$ mmol/L ($P = 0.0083$ compared with HFCS). Fasting apolipoprotein B ($P = 0.0051$, effect of sugar)—HFCS: $+0.12 \pm 0.031$ g/L; fructose: $+0.093 \pm 0.022$ g/L ($P = 0.87$ compared with HFCS); glucose: $+0.0097 \pm 0.019$ g/L ($P = 0.0056$ compared with HFCS).

Our reporting of the within-group, rather than between-group, comparisons in the abstract certainly could not mislead the reader. Both the between- and within-group comparisons reported in Tables 2 and 3 of the article support our conclusion that “Consumption of HFCS-sweetened beverages for 2 weeks at 25%E increased risk factors for cardiovascular disease comparably to fructose and more than glucose in young adults.”

It should also be noted that in the 4 y since this article was published, standards for the reporting of statistics and clinical trial results have changed considerably, and the policies of most high-impact journals have changed accordingly. For example, in 2009, a reviewer of our article published in the *Journal of Clinical Investigation* (3) critiqued our between-group statistical model as difficult to understand. Thus, we were instructed by the editor to move our tables describing the between-group differences to the supplement and, in the main article, replace them with tables that showed only the within-group changes with P values. Again, the intent was to clarify, not to mislead.

Neither of the authors had a conflict of interest.

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2. Bland JM, Altman DG. Best (but oft forgotten) practices: testing for treatment effects in randomized trials by separate analyses of changes from baseline in each group is a misleading approach. *Am J Clin Nutr* 2015;102:991–4.
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Reply to KL Stanhope and PJ Havel

Dear Editor:

We thank Stanhope and Havel for their interest. We used their article as our first example because they gave both the comparison between groups, which we regard as correct and said so, and the separate comparisons against baseline, which we were criticizing. We could therefore compare the two.

We were interested to learn of their experiences of journals that insist that they carry out or emphasize potentially misleading analyses. We have had similar experiences and sympathize. We did not intend to suggest that the authors of the examples we cited were deliberately trying to mislead readers, but that separate comparisons against baseline are misleading and, we argue, seldom of any value.

Neither of the authors had a conflict of interest.

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